What is claimed is:

1. A semiconductor device comprising:

a substrate;

a first thin film transistor having a first active layer including $Si_{1-x}Ge_x$ where $0 < X < 1$ formed over said substrate; and

a second thin film transistor having a second active layer including silicon formed over said substrate.

2. A semiconductor device comprising:

a substrate;

a first thin film transistor having a first active layer including $Si_{1-x}Ge_x$ where $0 < X < 1$ formed over said substrate; and

a second thin film transistor having a second active layer including silicon formed over said substrate,

wherein said first thin film transistor constitutes a CMOS circuit.

3. A semiconductor device comprising:

a substrate;

a first thin film transistor having a first active layer including $Si_{1-x}Ge_x$ where $0 < X < 1$; and

a second thin film transistor having a second active layer including silicon,

wherein said first thin film transistor constitutes a driver circuit and said second thin film transistor constitutes a pixel matrix circuit.

4. A semiconductor device according to claim 1, wherein said $Si_{1-x}Ge_x$ is polycrystalline silicon germanium and said silicon is polysilicon.

5. A semiconductor device according to claim 2, wherein said $Si_{1-x}Ge_x$ is polycrystalline silicon germanium and said

silicon is polysilicon.

6. A semiconductor device according to claim 3, wherein said $Si_{1-x}Ge_x$ is polycrystalline silicon germanium and said silicon is polysilicon.

7. A semiconductor device according to claim 1, wherein said $Si_{1-x}Ge_x$ is polycrystalline silicon germanium and said silicon is amorphous silicon.

8. A semiconductor device according to claim 2, wherein said $Si_{1-x}Ge_x$ is polycrystalline silicon germanium and said silicon is amorphous silicon.

9. A semiconductor device according to claim 3, wherein said $Si_{1-x}Ge_x$ is polycrystalline silicon germanium and said silicon is amorphous silicon.

10. A semiconductor device according to claim 1, wherein said first active layer further includes nickel at a concentration of 1 x 10^{15} to 1 x 10^{16} atoms/cm^3.

11. A semiconductor device according to claim 2, wherein said first active layer further includes nickel at a concentration of 1 x 10^{15} to 1 x 10^{16} atoms/cm^3.

12. A semiconductor device according to claim 3, wherein said first active layer further includes nickel at a concentration of 1 x 10^{15} to 1 x 10^{16} atoms/cm^3.

13. A semiconductor device according to claim 1 wherein said semiconductor device is for use in one of a handy phone, a video camera, a mobile computer, a head-mount display, a rear-type projector and a front-type projector.

14. A semiconductor device according to claim 2 wherein said semiconductor device is for use in one of a handy phone, a video camera, a mobile computer, a head-mount display, a rear-type projector and a front-type projector.

15. A semiconductor device according to claim 3 wherein

said semiconductor device is for use in one of a handy phone, a video camera, a mobile computer, a head-mount display, a rear-type projector and a front-type projector.

16. A method for manufacturing a semiconductor device, comprising:

a step of forming an amorphous silicon film on a substrate having an insulating surface;

a step of adding germanium to a part of said amorphous silicon film;

a step of adding an element to said amorphous silicon film to promote crystallization of said amorphous silicon film; and

a step of crystallizing said amorphous silicon film by heat treatment.

17. A method for manufacturing a semiconductor device, comprising:

a step of forming an amorphous silicon film on a substrate having an insulating surface;

a step of adding germanium to a part of said amorphous silicon film;

a step of forming a film comprising an element on a surface of said amorphous silicon film to promote crystallization of said amorphous silicon film; and

a step of crystallizing said amorphous silicon film by heat treatment.

18. A method for manufacturing a semiconductor device, comprising:

a step of forming an amorphous silicon film on a substrate having an insulating surface;

a step of forming a germanium film in contact with a part of said amorphous silicon film;

a step of adding an element to said amorphous silicon

film to promote crystallization of said amorphous silicon film; and

a step of crystallizing said amorphous silicon film by heat treatment.

19. A method for manufacturing a semiconductor device, comprising:

a step of forming an amorphous silicon film on a substrate having an insulating surface;

a step of forming a germanium film in contact with a part of said amorphous silicon film;

a step of forming a film comprising an element on a surface of said amorphous silicon film to promote crystallization of said amorphous silicon film; and

a step of crystallizing said amorphous silicon film by heat treatment.

20. A method for forming a semiconductor device according to claim 16, wherein said element is one or more elements selected from the group consisting of nickel, cobalt, iron, copper, palladium, platinum, gold and indium.

21. A method for forming a semiconductor device according to claim 17, wherein said element is one or more elements selected from the group consisting of nickel, cobalt, iron, copper, palladium, platinum, gold and indium.

22. A method for forming a semiconductor device according to claim 18, wherein said element is one or more elements selected from the group consisting of nickel, cobalt, iron, copper, palladium, platinum, gold and indium.

23. A method for forming a semiconductor device according to claim 19, wherein said element is one or more elements selected from the group consisting of nickel, cobalt, iron, copper, palladium, platinum, gold and indium.

24. A method for forming a semiconductor device

according to claim 16, wherein said heat treatment is carried out in a temperature range of from 550 to 650 °C.

25. A method for forming a semiconductor device according to claim 17, wherein said heat treatment is carried out in a temperature range of from 550 to 650 °C.

26. A method for forming a semiconductor device according to claim 18, wherein said heat treatment is carried out in a temperature range of from 550 to 650 °C.

27. A method for forming a semiconductor device according to claim 19, wherein said heat treatment is carried out in a temperature range of from 550 to 650 °C.

28. A method for manufacturing a semiconductor device, comprising:

a step of forming an amorphous silicon film on a substrate having an insulating surface;

a step of forming an insulating film on a part of said amorphous silicon film;

a step of covering said amorphous silicon film and said insulation film to form a germanium film; and

a step of crystallizing said amorphous silicon film at a portion at least in contact with said germanium film by heat treatment.

29. A method for forming a semiconductor device according to claim 28, wherein said heat treatment is carried out in a temperature range of from 500 to 550 °C.